

**$\eta(1475)$**

$I^G(J^{PC}) = 0^+(0^-+)$

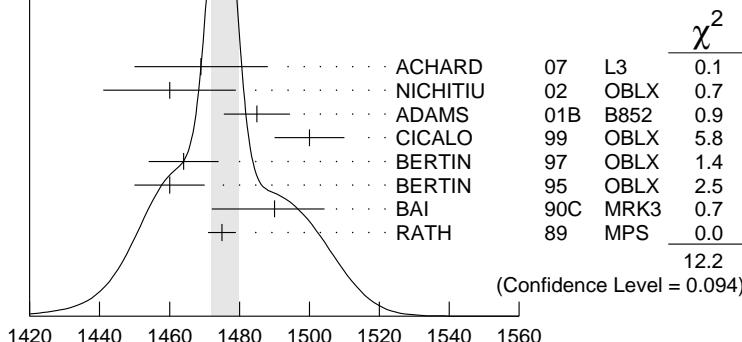
See also the  $\eta(1405)$ .

### $\eta(1475)$ MASS

#### $K\bar{K}\pi$ MODE ( $K^*(892)$ ) $K$ dominant)

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>1476± 4 OUR AVERAGE</b> Error includes scale factor of 1.3. See the ideogram below.				
1469±14±13	74	ACHARD	07 L3	$183-209 e^+e^- \rightarrow e^+e^- K_S^0 K^\pm \pi^\mp$
1460±19	3651	NICHITIU	02 OBLX	
1485± 8± 5	20k	ADAMS	01B B852	$18 \text{ GeV } \pi^- p \rightarrow K^+ K^- \pi^0 n$
1500±10		CICALO	99 OBLX	$0 \bar{p}p \rightarrow K^\pm K_S^0 \pi^\mp \pi^+ \pi^-$
1464±10		BERTIN	97 OBLX	$0 \bar{p}p \rightarrow K^\pm (K^0) \pi^\mp \pi^+ \pi^-$
1460±10		BERTIN	95 OBLX	$0 \bar{p}p \rightarrow K\bar{K}\pi\pi\pi$
$1490^{+14+ 3}_{-8-16}$	1100	BAI	90C MRK3	$J/\psi \rightarrow \gamma K_S^0 K^\pm \pi^\mp$
1475± 4		RATH	89 MPS	$21.4 \pi^- p \rightarrow n K_S^0 K_S^0 \pi^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1421±14		AUGUSTIN	92 DM2	$J/\psi \rightarrow \gamma K\bar{K}\pi$

WEIGHTED AVERAGE  
1476±4 (Error scaled by 1.3)



$\eta(1475)$  mass,  $K\bar{K}\pi$  mode ( $K^*(892)$ )  $K$  dominant) (MeV)

### $\eta(1475)$ WIDTH

#### $K\bar{K}\pi$ MODE ( $K^*(892)$ ) $K$ dominant)

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>85± 9 OUR AVERAGE</b> Error includes scale factor of 1.5. See the ideogram below.				
67±18± 7	74	ACHARD	07 L3	$183-209 e^+e^- \rightarrow e^+e^- K_S^0 K^\pm \pi^\mp$
120±19	3651	NICHITIU	02 OBLX	
98±18± 3	20k	ADAMS	01B B852	$18 \text{ GeV } \pi^- p \rightarrow K^+ K^- \pi^0 n$
100±20		CICALO	99 OBLX	$0 \bar{p}p \rightarrow K^\pm K_S^0 \pi^\mp \pi^+ \pi^-$
105±15		BERTIN	97 OBLX	$0 \bar{p}p \rightarrow K^\pm (K^0) \pi^\mp \pi^+ \pi^-$
105±15		BERTIN	95 OBLX	$0 \bar{p}p \rightarrow K\bar{K}\pi\pi\pi$
63±18		AUGUSTIN	92 DM2	$J/\psi \rightarrow \gamma K\bar{K}\pi$
$54^{+37+13}_{-21-24}$		BAI	90C MRK3	$J/\psi \rightarrow \gamma K_S^0 K^\pm \pi^\mp$
51±13		RATH	89 MPS	$21.4 \pi^- p \rightarrow n K_S^0 K_S^0 \pi^0$

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NODE=M175M5

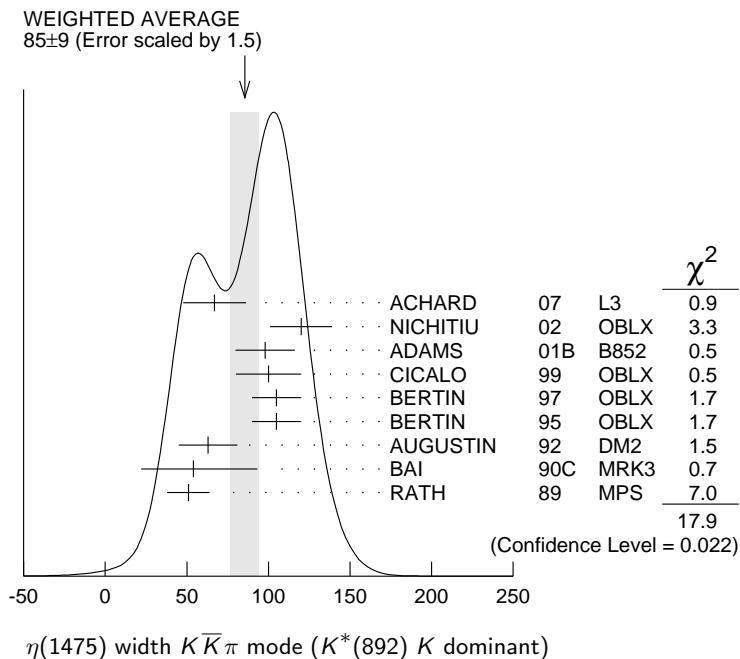
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OCCUR=2

OCCUR=2

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OCCUR=2



### $\eta(1475)$ DECAY MODES

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1 K\bar{K}\pi$	dominant
$\Gamma_2 K\bar{K}^*(892) + \text{c.c.}$	seen
$\Gamma_3 a_0(980)\pi$	seen
$\Gamma_4 \gamma\gamma$	seen

### $\eta(1475) \Gamma(i)\Gamma(\gamma\gamma)/\Gamma(\text{total})$

$\Gamma(K\bar{K}\pi) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$	$\Gamma_1\Gamma_4/\Gamma$
<u>VALUE (keV)</u>	<u>CL%</u> <u>EVTS</u>
<b>0.23±0.05±0.05</b>	74    1 ACHARD    07    L3 $183\text{--}209 e^+e^- \rightarrow e^+e^- K_S^0 K^\pm \pi^\mp$

• • • We do not use the following data for averages, fits, limits, etc. • • •

< 0.089                  90                  2,3 AHOHE                  05                  CLE2                   $10.6 e^+e^- \rightarrow e^+e^- K_S^0 K^\pm \pi^\mp$

<sup>1</sup> Supersedes ACCIARRI 01G. Compatible with  $K^*K$  decay. Using  $B(K_S^0 \rightarrow \pi^+\pi^-) = 0.6895$ .

<sup>2</sup> Using  $\eta(1475)$  mass of 1481 MeV and width of 48 MeV. The upper limit increases to 0.140 keV if the world average value, 87 MeV, of the width is used.

<sup>3</sup> Assuming three-body phase-space decay to  $K_S^0 K^\pm \pi^\mp$ .

### $\eta(1475)$ BRANCHING RATIOS

$\Gamma(K\bar{K}^*(892)+\text{c.c.})/\Gamma(K\bar{K}\pi)$	$\Gamma_2/\Gamma_1$
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.50±0.10                  4 BAILLON                  67                  HBC                  0.0  $\bar{p}p \rightarrow K\bar{K}\pi\pi\pi$

$\Gamma(K\bar{K}^*(892)+\text{c.c.})/[\Gamma(K\bar{K}^*(892)+\text{c.c.}) + \Gamma(a_0(980)\pi)]$	$\Gamma_2/(\Gamma_2+\Gamma_3)$
<u>VALUE</u>	<u>CL%</u> <u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>

• • • We do not use the following data for averages, fits, limits, etc. • • •

<0.25                  90                  EDWARDS                  82E CBAL                   $J/\psi \rightarrow K^+K^-\pi^0\gamma$

<sup>4</sup> Data could also refer to  $\eta(1405)$ .

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DESIG=4;OUR EST;→ UNCHECKED ←  
DESIG=7;OUR EST;→ UNCHECKED ←

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NODE=M175G2;LINKAGE=AH

NODE=M175G2;LINKAGE=B3

NODE=M175225

NODE=M175R1  
NODE=M175R1

NODE=M175R6  
NODE=M175R6

NODE=M175R;LINKAGE=BL

**$\eta(1475)$  REFERENCES**

NODE=M175

ACHARD	07	JHEP 0703 018	P. Achard <i>et al.</i>	(L3 Collab.)	REFID=51698
AHOHE	05	PR D71 072001	R. Ahohe <i>et al.</i>	(CLEO Collab.)	REFID=50764
NICHITIU	02	PL B545 261	F. Nichitiu <i>et al.</i>	(OBELIX Collab.)	REFID=48848
ACCIARRI	01G	PL B501 1	M. Acciari <i>et al.</i>	(L3 Collab.)	REFID=48319
ADAMS	01B	PL B516 264	G.S. Adams <i>et al.</i>	(BNL E852 Collab.)	REFID=49649
CICALO	99	PL B462 453	C. Cicalo <i>et al.</i>	(OBELIX Collab.)	REFID=47394
BERTIN	97	PL B400 226	A. Bertin <i>et al.</i>	(OBELIX Collab.)	REFID=45417
BERTIN	95	PL B361 187	A. Bertin <i>et al.</i>	(OBELIX Collab.)	REFID=44614
AUGUSTIN	92	PR D46 1951	J.E. Augustin, G. Cosme	(DM2 Collab.)	REFID=41584
BAI	90C	PRL 65 2507	Z. Bai <i>et al.</i>	(Mark III Collab.)	REFID=41578
RATH	89	PR D40 693	M.G. Rath <i>et al.</i>	(NDAM, BRAN, BNL, CUNY+)	REFID=40924
EDWARDS	82E	PRL 49 259	C. Edwards <i>et al.</i>	(CIT, HARV, PRIN+)	REFID=21314
BAILLON	67	NC 50A 393	P.H. Baillon <i>et al.</i>	(CERN, CDEF, IRAD)	REFID=20407

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